

## **Degree Statute the Master's Degree Program**

*Automotive Systems,  
Control Systems Engineering and  
Engineering Systems*

**of HAN University of Applied Sciences academic year 2019 - 2020**

### **Part 2          Education and Examination Regulations (EER)**

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## 1 About the Education and Examination Regulations (EER)

Each set of Education and Examination Regulations (EER) is included in a degree statute. The EER describes the study program for the degree program for each academic year. The EER covers the education, exams and final assessments for your degree program and your rights and obligations. The introduction in each chapter – the unnumbered section – only contains information. No rights or obligations can be derived from this.

### 1.1 Terms and definitions

Appendix 1 of the degree statute contains the terms and definitions that apply to these regulations.

### 1.2 To which programs do these Education and Examination Regulations apply?

These are the Education and Examination Regulations as referred to in article 7.13 of the Act, for the following degrees at HAN University of Applied Sciences (BRIN- number 25KB):

Degree program	Institute	CROHO number	Degree and title after graduation <sup>1</sup>
Master Automotive Systems	Centre of Expertise Faculty of Engineering	49134	Master of Science
Master Control Systems Engineering		49133	
Master Engineering Systems		49136	

### 1.3 Which Education and Examination Regulations apply to you?

The EER are revised each year at HAN University of Applied Sciences. This does not mean everything changes each year. Generally only a small number of changes are made to the study program and organization.

This EER applies to the 2019-2020 academic year, so starting on 1 September 2019 and ending on 31 August 2020. This means that during this same period it also applies to students who started their degree on 1 February 2019, or who will start their degree on 1 February 2020. It also means that students who start their degree on 1 February have two different EERs in their first "year".

Changes made to the EER do not apply to events or matters in the past, but only to the new academic year. Special rules may apply when switching from an "earlier" EER to a new EER. These rules can be found in the transitional regulations in chapter 8. Only in exceptional cases are changes needed to the EER during an academic year. Changes can only be made during an academic year if this is reasonably necessary and does not disadvantage the students. Transitional regulations may also apply in these cases: see chapter 8.

<sup>1</sup> See <https://www.nvao.net/actueel/publicaties/nvao-hbo-titulatuur-overzicht>

In cases not provided for in these Education and Examination Regulations, the faculty board will decide. If a case is subject to the authority of the board of examiners, a decision will be made by the chair of that board of examiners. Those with an interest in the decision will be informed of that decision within four weeks.

## **2 Accessibility of the degree program**

The general HAN rules for applications, admissions, education requirements, selection and enrolment can be found in the enrolment regulations <https://www.han.nl/opleidingen/master/en/engineering-systems/admission/>. This chapter contains rules that apply more specifically to accessibility of the degrees mentioned in section 1.2.

### **2.1 Language in which the degree is offered**

This degree program is offered in English. If you want to successfully complete a degree program offered in English, you need to have sufficient mastery of the language. Detailed information can be found on:

<https://www.han.nl/opleidingen/master/en/engineering-systems/admission/>.

### **2.2 Further admission requirements**

In addition to the general admission requirement a motivation letter and a CV have to be submitted. Detailed information can be found on:

<https://www.han.nl/opleidingen/master/en/engineering-systems/admission/>.

### **2.3 If you do not yet meet all the requirements: When can you take an admission test?**

If you cannot submit a degree certificate or other documentation that shows you meet the entry requirements, you may take an admission test to demonstrate that you meet the entry requirements. This admission test is organized and administered by the board of examiners for the degree program.

#### **2.3.1 You have a refugee status and do not meet the education requirements**

Did you flee your home country? Are you unable to prove that you meet the education requirements? Then you can take an admission test to demonstrate your suitability for admission to a university of applied sciences. The procedure for this is described in section 2.3.

In addition, the same language requirements apply as for other foreign students: See section 2.1. You need to pass all components before you can be enrolled in the degree. The further education requirements and additional requirements described in the enrolment regulations also apply to you.

### **2.4 Abridged program**

You can do our abridged program – MAE – if you have successfully participated in the first year of the program at CTU in Prague; that makes you eligible for the exemptions needed for the abridged program. Detailed information can be found on the website, appendix 1 of this document and part 3 of this degree statute.

## **2.5 Employment requirements for part-time degree programs**

In addition to the entry requirements provided above, the part-time degree program is subject to the requirement that you have a job position that will enable you to successfully complete (major project) the degree program. This job must allow you to perform the work activities as described in the units of study (module major project. Detailed information about the major project can be found in part 3 of this degree statute).

### 3 Description of the degree program

In this chapter you can read about the format in which the degree program is offered, where it is taught, how it is organized and what each component involves. You can also read about the study load of the different units of study and modules offered in the degree program.

#### 3.1 Degree program formats and variants

The degree program can be taken as a full-time or part-time program in English. The lessons of the program take place in Arnhem.

#### 3.2 Structure of the degree program

The degree program is composed of the following units of study grouped into modules. The structure of the study program (the descriptions of the units of study) is provided in part 3 of this degree statute. Relationships and entry requirements for the units of study grouped into modules can be found there too.

##### 3.2.1 Units of study: mandatory (60 EC)

M SM	Module Systems Modelling			
Teaching Term	Semester 1 / semester 2			
Overview units of study	Units of Study		EC	study load
	M SM AP	Applied Physics	2.0	56
	M SM IM	Introduction Modelling	2.0	56
	M SM PMS	Practice Modelling and Simulation	2.0	56
	M SM RS	Energy Based Modelling	2.0	56
	M SM BB	System Identification	2.0	56
	M SM MP	Systems Modelling Minor Project including Research Skills	5.0	140
			15	420

M AC	Module Applied Control			
Teaching Term	Semester 1 / Semester 2			
Overview units of study	Units of Study		EC	study load
	M AC FC	Feedback Control	4.0	112
	M AC ACS	Apply Control Strategy	2.0	56
	M AC CI	Controller Implementation	2.0	56
	M AC MSO	Multivariable systems and optimizations	2.0	56
	M CD MP	Controller Design Minor Project	5.0	140
			15	420

M MAJP	Module Major Project			
Teaching Term	Semester 1 / Semester 2			
Overview units of study	Units of Study		EC	study load
	M MAJP MP	Major Project	28	784
	M MAJP MWP	Managing Work Processes	2	56
			30	840

### 3.2.2 Units of study: eligible (30 EC)

M ACD	Module Advanced Controller Design			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M ACD T	Advanced Controller Design Theory	7.5	210
	M ACD CS	Advanced Controller Design Capita Selecta	2.5	70
	M ACD MP	Advance Control Minor Project	5.0	140
			15	420

M AVD	Module Advanced Vehicle Dynamics			
Teaching Term	Semester 1 / Semester 2			
Overview units of study	Units of Study /		EC	study load
	M AVD T	Advanced Vehicle Dynamics Theory	7.5	210
	M AVD CS	Advance Vehicle Dynamics Capita Selecta	2.5	70
	M AVD MP	Advanced Vehicle Dynamics Minor Project	5.0	140
			15	420

M BD	Module Big Data & Small Data			
Teaching Term	Semester 1 / Semester 2			
Overview units of study	Units of Study		EC	study load
	M BD DCML	Data Collection and machine learning	7.5	210
	M BD ASI	Apply Systems Identification (Capita Selecta)	2.5	70
	M BD MP	Big Data & Small Data Minor Project	5.0	140
			15	420



M DS	Module Distributed Systems			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M DS T	Distributed Systems Theory	7.5	210
	M DS CS	Distributed Systems Capita Selecta	2.5	70
	M DS MP	Distributed Systems Minor Project	5.0	140
			15	420

M EHFP	Module Electric Hybrid & Fuel cells Powertrain			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M EHFP T	Electric Hybrid & Fuel cells Powertrain Theory	7.5	210
	M EHFP CS	Electric Hybrid & Fuel cells Powertrain Capita Selecta	2.5	70
	M EHFP MP	Electric Hybrid & Fuel cells Powertrain Minor Project	5.0	140
			15	420

M PD	Module Process Development			
Teaching Term	Semester 1			
Overview units of study	Units of Study		EC	study load
	M PD OM	Process Development Operations Management	5.0	140
	M PD FP	Process Development Factory Physics	2.5	70
	M PD CS	Process Development Capita Selecta	2.5	70
	M PD MP	Process Development Minor Project	5.0	140
			15	420

M PdD	Module Product Development			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M PdD MAP	Product Architecture Mapping	4.0	112
	M PdD PDD	Product Design and Development	3.5	98
	M PdD CS	Product Development Capita Selecta	2.5	70
	M PdD MP	Product Development Minor Project	5.0	140
		15	420	

M SI	Module Smart Infrastructure			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M IM T	Intelligent Mobility Theory	7.5	210
	M IM CS	Intelligent Mobility Capita Selecta	2.5	70
	M IM MP	Intelligent Mobility Minor Project	5.0	140
			15	420

M SPS	Module Smart Power Supplies			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M SPS EN	Energy Management	2.5	70
	M SPS PC	Power Control	2.5	70
	M SPS PQ	Power Quality	2.5	70
	M SPS AM	Asset Management	2.5	70
	M SPS MP	Smart Power Supplies Minor Project	5.0	140
			15	420

M SV	Module Smart Vehicles			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M IM T	Intelligent Mobility Theory	7.5	210
	M IM CS	Intelligent Mobility Capita Selecta	2.5	70
	M IM MP	Intelligent Mobility Minor Project	5.0	140
			15	420

M SES	Module Sustainable Energy Systems			
Teaching Term	Semester 1			
Overview units of study	Units of Study		EC	study load
	M SES T	Sustainable Energy Technology	5.0	140
	M SES I	Energy System Integration	5.0	140
	M SES MP	Sustainable Energy Minor Project	5.0	140
			15	420

M SFEE	Module Sustainable Fuel Engines and Emissions			
Teaching Term	Semester 2			
Overview units of study	Units of Study		EC	study load
	M SFEE T	Sustainable Fuel Engines and Emissions T	5.0	140
	M SFEE I	Sustainable Fuel Engines and Emissions CS	5.0	140
	M SFEE MP	Sustainable Fuel Engines and Emissions Minor Project	5.0	140
			15	420

### 3.2.1 Study load and ECTS credits

The degree program consists of a coherent set of units of study and modules. The study load of a degree program and of individual units of study are expressed in ECTS credits. The study load for a module is 15 ECTS credits. The Master's program has a study load of 90 ECTS credits. Each academic year is structured in such a way that it has a standard study load of 60 ECTS credits. The part-time format has an academic year with a standard study load of 30 ECTS credits.

#### 3.2.1.1 Study load for abridged program

The study load for the abridged program for MAE is 60 ECTS credits.

The program is referred to as abridged because of exemptions that make it possible for the degree to be completed within one year.

### 3.2.3 Graduation specialization

Graduation specializations can be found in chapter 6.2. Chapter 6.2 describes the graduation specialization, with corresponding units of study, and exams and modular exams. The 'entrance requirements' for the graduation specialization are also stipulated here.

### 3.3 If the content or structure of your degree program changes

We regularly change or update components of the study program so we can guarantee the quality of the degree and the value of your degree certificate. This means the EER for a next academic year may contain changes to your study program.

Changes to the study program can have certain consequences. If you fall behind in your studies, for example, you may need to pass a different exam than you initially thought. A change may also mean an exam is still offered, but you can no longer attend the classes for this particular component.

A change cannot mean that units of study or exams/modular exams you have already passed no longer count towards your final Masters assessment. The law only allows this in highly exceptional cases.

If required, the transitional regulations in chapter 8 stipulate how this works for each change made to the study program.

### **3.4 Extra units of study**

As a student you can take one or more extra modules or units of study at HAN. If you choose to do this, you will be expanding your study load. You can do this by adding an extra module.

You do not need approval from the board of examiners to participate in an extra module or one or more extra units of study.

Capacity limits may apply for participation in an extra module.

## **4 Personal tutoring**

The learning objective and basic principle is that you are responsible for your own learning process. We also want you to feel acknowledged, seen and heard during your entire time as a student. You are entitled to good personal tutoring. Each department offers support for this. If needed, HAN can also offer you academic, psychological and financial support. The HAN Study Success network offers support for successful study progress.

### **4.1 What does your department provide to help you study?**

The institute offers facilities that enable you to do well in your studies.

In addition to the general facilities, your department also offers at least the following facilities:

1. personal tutoring as described in these Education and Examination Regulations;
2. two exam opportunities each academic year;
3. facilities for students with a functional disability;
4. facilities for students who are pregnant, young parents, and informal care givers;
5. special support for international students;
6. special support for students from minority groups;

### **4.3 How is personal tutoring organized?**

The personal tutoring starts with the introduction or re-introduction to the personal tutor at the start of the academic year. In the first year of study, your personal tutor invites you to at least 2 meetings. Moreover, personal tutoring is mainly integrated in the study program as part of the units of study, for example the minor projects.

HAN also has the Study Success network, which offers support to help students succeed in their studies. Students who need this can get extra support.

Students with a functional disability can ask for more time during exams.

International students are also assisted by the coordinator of International Affairs with regard to issues not directly related to the program (housing, banking, insurance, etc.).

During the Major Project phase the student's supervisor of HAN University has several meetings with the student. The frequency of these meetings depends on the progress of the Major Project. The HAN supervisor is also in contact with the company's supervisor or HAN Research Group Supervisor to ensure that the necessary requirements will be met.

## **5 Exams and final assessments of the degree program**

### **5.1 Coherent set of units of study**

A degree program consists of a coherent set of units of study and modules that are defined and described in part 3. Each unit of study has a related exam. An exam can consist of two or more modular exams that have a predetermined weight factor and jointly determine the grade for the exam of the unit of study.

### **5.2 Exam**

The result of an exam for a unit of study is used to determine whether the student has the knowledge, understanding and/or skills and (if relevant) attitude required to successfully complete that unit of study. The assessment dimensions, learning outcomes and assessment criteria of the exams and modular exams are provided in part 3.

#### **5.2.1 Entry requirements**

Some units of study have entry requirements for participating in educational activities, exams and modular exams for that unit of study. The entry requirements are provided in the unit of study descriptions in part 3.

#### **5.2.2 Mandatory participation**

In some cases you may only do an exam or modular exam if you have participated in the educational activities for the unit of study linked to that exam or modular exam.

Minor projects for example cannot be examined without participation.

Part 3 of this degree statute further stipulates which units of study have full or partial mandatory participation. The appointed examiner may grant full or partial exemption of mandatory participation. In that case, the examiner imposes an equivalent requirement instead.

#### **5.2.3 Exam format**

The format of an exam or modular exam is specified in part 3 in the description of the unit of study concerned. The board of examiners may deviate from this format in special cases, on request or at their own initiative.

### **5.3 The examiner**

Each exam and modular exam is designed and assessed by one or more examiners, as decided and appointed by the board of examiners. The examiner determines the result of the exam or modular exam and sets the grade. If more than one examiner is appointed, the head examiner sets the definite grade.

#### **5.3.1 When do you pass an exam?**

The examiner gives the result of an exam as a grade. The result of an exam is expressed in one of the following numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10.

You pass the exam if you earn a grade of 6 or higher. You *fail* the exam if you earn a grade of 5 or lower.

### **5.3.2 How is the overall grade calculated for an exam of an unit of study with modular exams?**

A grade for a modular exam is rounded to a number with 1 decimal place.

Grades with the decimals 1, 2, 3 or 4 are rounded down.

Grades with the decimals 5, 6, 7, 8 or 9 are rounded up.

You pass a modular exam if you earn a grade of 5.5 or higher.

You fail a modular exam if you earn a grade of 5.4 or lower.

When the overall grade for the exam is calculated, the grades earned for the modular exams are weighted as specified in the unit of study descriptions given in part 3. The final exam grade is then rounded as following.

Exam grades with the decimal 1, 2, 3 or 4 are rounded down to whole numbers.

Exam grades with the decimal 5, 6, 7, 8 or 9 are rounded up to whole numbers.

### **5.3.3 Final grade and compensation**

The final grade for an exam or modular exam is the highest grade achieved. You are allowed to resit an exam or modular exam even if you pass it.

The unit of study descriptions in part 3 of this degree statute specify which compensation regulations apply for exams and modular exams. In case compensation is possible then you need at least a 4.5 to compensate other marks.

### **5.3.4 When are you awarded a 'pass/fail' qualification?**

Contrary to sections 5.3.1 and 5.3.2, a pass/fail can be given instead of a grade in the following cases:

- a) you have an exemption for one or more modular exams, so the result of that exam cannot be expressed in a grade,
- b) the HAN conversion tables do not apply,
- c) if an exam consists of modular exams, the result of a modular exam can be expressed in a grade or in a 'pass' or 'fail'. The unit of study descriptions in part 3 specify which modular exams are assessed with a grade and which with a 'pass' or 'fail'.

## **5.4 Number of exams per academic year**

You have two opportunities each year to take an exam or modular exam. The descriptions of the units of study in part 3 specify how many exams and modular exams are offered each academic year and in which teaching period.

In the following exceptional situations the unit of study description in part 3 may stipulate that only one opportunity will be given each academic year for students to take an exam or modular exam:

- if the nature of the education and assessment for the unit of study make it impossible to offer a second opportunity. In this case, the student should receive an indication sometime during the unit of study of whether their performance so far is sufficient for them to pass the exam or modular exam for that unit of study, or,
- if it is not possible to offer a second opportunity due to physical or logistic reasons and the next opportunity cannot be offered until the following academic year, and
- an alternative has been offered that prevents further study delay.

The student will be informed of this exception when they apply for the unit of study and, if possible, before the start of the academic year.

#### **5.4.1 Participation in an exam opportunity**

If you participate in a unit of study, you are automatically registered for the corresponding exam or corresponding modular exams.

If you are not participating in a unit of study in the current teaching period but you have the right to participate in the unit of study or to take the exam, you need to register for the exam separately via the Education Office two weeks before the exam.

#### **5.4.2 Request for an extra exam opportunity or another exam format**

You can submit a request to the board of examiners for an extra exam opportunity.

You can submit a request to the board of examiners to take an exam or modular exam in a different format.

The request must include a good motivation and at least a description of the reason and importance. The Regulations of the Board of Examiners gives further details on the procedure.

#### **5.5 Modified exam format due to functional disability**

Do you have a functional disability or chronic illness, or is there another reason such as pregnancy that means you cannot participate in the regular format of the exam or modular exam? Then you can ask the board of examiners to conduct the exam or modular exam in a format modified to your situation.

The board of examiners will decide, after consultation with you and the examiner where needed, which format can reasonably be used for the exam or modular exam, which facilities will be offered and which different rules will apply.

#### **5.6 Oral exams and modular exams**

An oral exam or oral modular exam is conducted by means of a conversation between the examiner(s) and the student. Oral exams and oral modular exams are public. In special cases, the board of examiners can deviate from this rule. This decision will be announced and explained to everyone involved.



### **5.7 When are the exam results announced?**

It depends on the exam format when the results of an exam or modular exam are announced:

- You will be informed of the results of a written exam or written modular exam within at least 15 working days. These results will be recorded in the Alluris student information system.
- The results of an oral exam or oral modular exam will be decided directly after the exam and announced within no more than 5 days. These results will be recorded in the Alluris student information system.
- You will be notified of the results of a practical exam or practical modular exam immediately after the exam, or if that is not possible, within 5 working days. These results will be recorded in the Alluris student information system.

A grade recorded in the Alluris student information system can only be changed in the following cases:

- If you can show an incorrect grade has been recorded in the student information system.
- In cases of fraud, deceit or impersonation.
- If an examiner has revised their assessment for a well-founded reason.
- If you have lodged an appeal to the Examination Appeals Board or the Higher Education Appeals Tribunal against an assessment, the appeal is judged to be valid and the grade has been revised by the examiner.

What happens when a grade is revised after it has been recorded in the student information system? Then the board of examiners, the examiner and you will be notified about this and the reason for the change.

### **5.8 Exams: review and discussion rights**

Did you think the assessment of your exam/modular exam or the discussion were unclear? Then you can ask the lecturer for further explanation. The discussion and individual review are closely monitored to ensure no fraud takes place during this phase. Discussion and review rights are organized as follows:

#### **5.8.1 Group discussion**

Within 10 working days after the results of an exam or modular exam, the examiner organizes a group discussion, unless there is clearly no need for this among the students.

#### **5.8.2 Revision and discussion of individual work**

After the group discussion or if there was no group discussion, you as an interested party are entitled to review and discuss your own work with your lecturer and the examiner, unless you could reasonably have done this already during the group discussion. You are allowed to review and discuss everything: the assessed exam or modular exam, the questions, assignments and marking system.

### **5.8.3 Other exam formats**

If an exam has been administered in a format that cannot be reviewed or discussed as outlined in the procedure above, the unit of study description in part 3 will specify how the review and discussion is organized. The same principles will be guaranteed as in sections 5.8.1 and 5.8.2.

### **5.9 Exams taken independently of the standard program**

If you want to take an exam or modular exam independently of the standard program, you can submit a request to the board of examiners. You must prove you have certain competences, for example because you passed a relevant exam or modular exam in higher education. The following applies here:

- this evidence is insufficient to be granted an exemption for the exam or modular exam, and;
- you have the right competences related to one or more exams or modular exams.

You can also submit a request to the board of examiners if there are other cases in which you want to take an exam independently of the standard program.

The board of examiners will make a reasoned decision based on the evidence submitted within 20 working days. If that decision is positive, you can participate in the exam without following any of the educational components for the unit of study. If the regular exam is not suitable for this, the board of examiners will appoint the examiners and decide on the exam format, in accordance with the relevant exit qualifications and assessment criteria given in part 3.

### **5.10 When and how can you request exemption for an exam or modular exam?**

The board of examiners will grant you an exemption for one or more exams or modular exams if you can demonstrate you have the knowledge, understanding and skills and (if relevant) the attitude that are assessed in the exam or modular exam for which you have requested an exemption. You can demonstrate this with:

- evidence showing you have passed a relevant exam in higher education;
- an official report showing recognition of prior learning;
- evidence you gained the required knowledge, the required insight and/or the required skills elsewhere.

The assessment dimensions and assessment criteria of the exams and modular exams apply as specified in part 3.

Instead of a grade, you receive the qualification of 'exemption' for an exam or modular exam. The procedure for granting exemptions can be found in the Regulations of the Board of Examiners.

The board of examiners may designate certain previously completed exams and modular exams, ECTS credits and degree certificates as entitling students to exemption from one or more modular exams.

The designated exams, credits and certificates are outlined in an appendix to the Regulations of the Board of Examiners.

The board of examiners may also consider these as grounds for exemptions for one or more exams or modular exams for units of study that are part of the abridged program as referred to in section 2.4.

### **5.11 The final Masters assessment**

You pass the final Masters assessment if you have passed all of the exams related to that final assessment. This will differ if the board of examiners decides that an extra assessment is needed of your knowledge, understanding and skills. In that case, you will also need to pass that extra evaluation (exam). Only then will you pass the final assessment.

#### **5.11.1 The final Masters assessment: cum laude**

If you pass all the exams that count towards the final assessment with a grade of 8 or higher on your first attempt, you will pass that assessment 'cum laude'. These are the overall exam grades for each unit of study; separate grades for the modular exams are not taken into consideration. If an exam comprises several modular exams, only the grades for the modular exams that were passed on the first attempt will count towards the required grade of 8 for the exam. One exception can be made to this rule for each final assessment. This exception is that a student may retake one modular exam and the highest grade will then count towards whether or not they receive the cum laude distinction.

Exams that are part of an increase of your study load, as described in chapter 3, are not taken into consideration when determining the cum laude distinction. You may earn no more than 30 ECTS credits worth of exemptions or 'pass' qualifications during the Master's program.

#### **5.11.2 The final Masters assessment: with merit**

If you pass all the exams that count towards the final assessment with a grade of 7 or higher on your first attempt, you will pass the final Masters assessment 'with merit'. These are the overall exam grades for each unit of study; separate grades for the modular exams are not taken into consideration. If an exam comprises several modular exams, only the grades for the modular exams that were passed on the first attempt will count towards the required grade of 7 for the exam. One exception can be made to this rule. This exception is that a student may retake one modular exam and the highest result then counts towards determining whether they receive the with merit distinction.

Exams that are part of an increase of your study load, as described in chapter 3, are not taken into consideration when determining the cum laude distinction. You may earn no more than 30 ECTS credits worth of exemptions or 'pass' qualifications during the Master's program.

### **5.12 Overview of results, supporting documents and declarations**

#### **5.12.1 How to request a – certified – overview of your study results**

You can make a printout of your exam results as recorded in the Alluris student information system. If you want to use this overview as an official document at HAN University of Applied

Sciences or elsewhere, you can submit a request to the board of examiners for a certified grades list. This certification does not guarantee that the relevant authorities will also consider the document official.

#### **5.12.2 Exam documentation**

You will receive signed evidence from the examiner for each exam or modular exam you take. This may be a digitally signed document. This document gives the name and code of the exam and unit of study and your result. The examiner is required to provide you with this evidence.

Keep this evidence in a safe place.

#### **5.12.3 Statement**

If you are not entitled to a degree certificate, but you have passed more than one exam, you will receive a certified statement from the board of examiners listing the exams you passed, for which degree program, how many ECTS credits you earned for these exams and, if applicable, the program for which the statement is being issued. This statement includes an appendix with a certified grades list.

#### **5.12.4 Module certificate**

You receive a certificate from the board of examiners for each successfully passed module. This certificate specifies the name of the module, the units of study within the module, the study load and your results for the exam.

### **5.13 Degree certificate, degree and diploma supplement**

#### **5.13.1 Degree**

Once the board of examiners has confirmed you have passed the final Masters assessment, the HAN Executive Board will award you a Master of Science. The related official abbreviation you can place after your name in the Netherlands and abroad is: MSc.

#### **5.13.2 Degree certificate**

Once the Institutional Board has awarded the degree and has confirmed that you are enrolled for the degree at HAN and have met all your financial requirements towards HAN, the board of examiners will award you the certificate for the Master's degree and the corresponding diploma supplement.

#### **5.13.3 Different issuing date for Master's degree certificate**

You can request the board of examiners to postpone issuing your degree certificate. This postponement can be granted for up to two years.

### **5.14 Appeal**

You can lodge an appeal with the Examination Appeals Board against a decision concerning the education, exams and final assessments within 6 weeks based on the EER.

You can read which decisions you can appeal about and how to do this on HAN Insite under Complaints and Disputes Office,

[https://www1.han.nl/insite/sb/content/Heb\\_je\\_een\\_klacht\\_of\\_geschil.xml?sitedir=/insite/studie\\_succes](https://www1.han.nl/insite/sb/content/Heb_je_een_klacht_of_geschil.xml?sitedir=/insite/studie_succes) .

## 6 Description of the education (the units of study)

### 6.1 Units of study and modules including units of study

Part 3 of this degree statute – and part of the Education and Examination Regulations - describes the education provided in your degree program in the form of a curriculum overview and description of the units of study.

### 6.2 Graduation specializations

We offer you the following elective modules grouped by tracks:

Specialization	Modules
<i>Automotive Systems: Green mobility</i> <i>Automotive Systems: Smart Mobility</i>	Advanced Vehicle Dynamics Big Data & Small Data Electric Hybrid & Fuel Cells Powertrains Smart Infrastructure Smart Vehicles Sustainable Fuel Engines and Emissions
<i>Control Systems</i>	Big Data & Small Data Advanced Controller Design
<i>Embedded Systems</i>	Big Data & Small Data Distributed Systems
<i>Lean Engineering</i>	Big Data & Small Data Process Development
<i>Sustainable Energy</i>	Big Data & Small Data Smart Power Supply Sustainable Energy Systems

## **7 Evaluation of the degree program**

### **7.1 Evaluation structure**

A quality framework has been adopted for all HAN degree programs. This is geared to the accreditation framework of the Accreditation Organization of the Netherlands and Flanders (NVAO) and in line with the education policy formulated by HAN. This framework stipulates that regular evaluations must be held among students, graduates, professional field and staff.

Assessments are also held by HAN to support the evaluations at degree program level. Each year all HAN degree programs participate in the National Student Survey (NSE) in which students indicate how satisfied they are with different aspects of their degree program.

An alumni survey is held each year for each degree program that evaluates how alumni look back on their degree program and how well it is geared to the labor market in their experience.

All HAN students who leave a degree program without a degree certificate are contacted to enquire about their reason for leaving. Also, study progress and drop-outs are monitored for each degree program.

Every six years an accreditation is held by the NVAO, with external reviews beforehand by a committee of experts. Halfway through the accreditation cycle, an audit is conducted by an internal committee complemented by an external expert in the relevant field. The aim is to monitor and test the progress of improvement measures relating to the last external assessment of the degree program. This internal audit results in a report with improvement recommendations for those responsible for the content of the program, the degree committee and the institute management.

The Education and Research Service Unit conducts this audit according to established protocol, which includes quality assurance with regards to administrative and educational law and good implementation of the EER components.

### **7.2 Evaluation by the degree program**

The leading lector is responsible for the structure and the quality of the degree program.

Each year the leading lector adopts an annual quality assurance report on the degree program. This document, along with the internal audit report or review report, forms the basis for dialogue about the quality of the program. This report concerns the improvement activities that were agreed on for the reported year, how they were executed and what results they delivered.

Based on the analysis of evaluation data for the reported year, a description follows of the improvement activities to be implemented in the current year. The evaluation data come about through evaluations of units of study, annual evaluations and curriculum evaluations by lecturers,

students, alumni and the professional field. Also through evaluation studies conducted centrally by HAN.

The program coordinators and/or the degree committee, curriculum committee and the board of examiners are involved in this cycle at program level by means of a brief response to this. Their responses are included in the appendixes to the annual report.

### **7.3 Role of the degree Committee**

The tasks, role and responsibilities of the degree committee in the evaluation are set out in the Regulations of the Degree Committees. The degree committee can also take the initiative to conduct specific evaluation studies or have them conducted.

### **7.4 Program-specific quality assurance**

Modules will be evaluated twice (each term) written by the responsible module lecturer.



## 8 Transition regulations

### General provisions

#### 8.1 Changes to EER

A change to the EER can only become effective as of 1 September in the following academic year. Exceptions to this rule are clerical error, force majeure, fulfilment of legal regulations or when the change is in your favor. This chapter contains the rules for the fulfilment of the vested rights and legitimate expectations.

#### 8.2 Credits earned

The result of an exam or modular exam and its corresponding credits remain valid until the board of examiners has made a substantiated decision that the examined material is so outdated that it can no longer be used in the profession and the term of validity has passed as of a date stipulated by the board of examiners.

#### 8.3 Participation in education activities, exam not done or not passed

A student who has participated in the education for a unit of study in the academic year prior to the program change, but who has not sat for an exam or modular exam or has not passed an exam or modular exam, has a right to repeat the education at least during the academic year in which the change becomes effective, and has a right to at least two opportunities to sit for the relevant exams. The board of examiners can deviate from this in exceptional cases, in the favor of the student. If you like, you can directly choose the new program structure and register for a renewed or changed unit of study. By doing so, you waive your rights concerning the transition rules.

### Program-specific regulations

#### 8.4 Program-specific transition regulations

##### 2017 – 2018

M Systems Modelling, IM 2  
 M Controller Design, OC  
 M Vehicle Dynamics & Control  
 M Intelligent Mobility  
 M Innovations in Powertrains

##### MAS

Automotive Management

##### MCSE

System Identification  
 Non Linear Control/Optimal Control incl. Lab.

##### 2018 – 2020

M Systems Modelling, EBM  
 M Applied Control, MSO  
 M Advanced Vehicle Dynamics  
 M Smart Vehicles / M Smart Infrastructure)  
 M Electric Hybrid Fuel Cells Powertrains /  
 M Sustainable Fuel Engines and Emissions

Major Project Managing Work processes

M Big Data & Small Data  
 M Advanced Controller Design

## Appendix 1 List of abridged programs

### Master of Engineering Systems track Automotive Systems / MAE

Background: The MAS Accreditation Framework document<sup>i</sup> allows exemptions for students, formulated in the following way (quote):

*There are possibilities that a candidate has previously completed programs on one or more of the topics of the introductory program, such as those having successfully followed the first year post-graduate program in Automotive Engineering in Prague (Czech Technical University in Prague, CVUT). In that case, the student may be granted exemptions from carrying out one or more of the modules, being part of the introductory phase of the master. The candidate is never granted an exemption for (part of the) modules of the specialization program or the final project.*

This document discusses the MAS first semester program and the first year program of the European Master of Automotive Engineering (MAE) and concludes that a successful first year of the MAE is awarded by exemptions for the modules mentioned on the next page. The exemptions will be granted after completion of 34 credits at HAN:

The MES AS program and the MAE first year program: The MES AS program (64 credits) covers the following topics:

MAS-1.	Module Advanced Vehicle Dynamics	(15 EC)
MAS-2.	Innovations in Power Trains (joint project AVD)	(5 EC)
MAS-3.	Module Applied Control	(15 EC)
MAS-4.	Module Systems Modelling	(4 EC)
MAS-5.	Major Project	(30 EC)

with the number of credits (EC) between brackets.

The MAE first year program covers the following topics:

EMAE-1.	Internal Combustion Engines 1 (5)
EMAE-2.	Mechanical and Hydraulic Transmissions 1 (4)
EMAE-3.	Micro-Electronics in Vehicles (2)
EMAE-4.	Multibody Modelling for Vehicle Systems (5)
EMAE-5.	Technology for Automotive Production (4)
EMAE-6.	Design against Fatigue (2)
EMAE-7.	Marketing, Economy and Finances (2)
EMAE-8.	Computation of Fluid Dynamics (4)
EMAE-9.	Foreign Language – I (3)
EMAE-10.	Internal Combustion Engines 2 (2)
EMAE-11.	Mechanical and Hydraulic Transmissions 2 (2)

- EMAE-12. Project and 3D CAD (3)
- EMAE-13. Vehicle Dynamics (6)
- EMAE-14. Vibration of Vehicles (5)
- EMAE-15. Design of Tools and Plastic Parts (3)
- EMAE-16. Vehicle Concept., Structure, Aggregates and Safety (3)
- EMAE-17. Quality (3)
- EMAE-18. Foreign Language – II (3)

In addition to lecturing, the following teaching and study methods are applied:

- Practical work (laboratory, practical training) is included in EMAE-2, EMAE-3, EMAE-11
- Specific modeling activities and exercises are included in EMAE- 4, EMAE-6, EMAE-7, EMAE-13, EMAE-14.
- Individual assignments and project presentations are included in EMAE-5, EMAE-12.
- Take-home assignment for almost all topics

Comparison between MES AS and MAE first year: In this section, the MAE first year program will be considered in comparison with the MAS program.

- The contents of MAS-2 is covered (term 1) by the various MAE courses.
- The contents of MAS-2 is partly covered (term 2) by the various MAE courses.
- The contents of MAS-4 (term 1) is covered by the various MAE courses.
- The contents of MAS-4 (term 2) is partly covered by the various MAE courses.
- The in-take requirements for MAS and MAE related to Mathematics and Mechanics are identical. The theory as described in the self-assessment is treated again in MAS-1 to validate this level again. The first year program covers a sufficient amount of mathematics to ensure that the student will have acquired the output level of MAS-4.
- MAS-Minor Projects are not included in MAE. Instead, MAE-students carry out practical (team-) work (EMAE-2, EMAE-3, EMAE-11) and individual assignments (EMAE-5, EMAE-12), practicing the minor assessment aspects of Annex 5. As mentioned before, the MAS puts more emphasis on the communication part, but that is corrected in MAS-semester 1 (Applied Control and Advanced Vehicle Dynamics) for these students.

Conclusion: the students, having successfully finished the first year of MAE, are considered partly to master knowledge and skills according to the MES AS first semester output level, and they are granted exemptions for the following units of study after completion of 34 credits at HAN:

- Module Systems Modelling ( M AP, M IM, M EBM, M SM MP)
- Module Innovations in Powertrains (M IPT T, M IPT CS)